

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte JOEL VATSKY

---

Appeal No. 1998-1553  
Application 08/595,965

---

ON BRIEF

---

Before COHEN, FRANKFORT and McQUADE, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Joel Vatsky appeals from the final rejection of claims 11 through 16, all of the claims pending in the application. We reverse.

The invention relates to a "burner assembly which operates in a manner to stabilize the air flow to the burner and reduce the formation of nitrogen oxides as a result of fuel combustion" (specification, page 1). Claim 11 is representative and reads as follows:

11. A burner assembly comprising an outer tubular member, an inner tubular member extending within the outer tubular member to define a flow passage, an inlet located at one end of the flow passage for receiving fuel into the flow passage, an outlet located at the other end of the flow passage for discharging the fuel, a splitter disposed in the flow passage for splitting up the fuel discharging from the outlet so that, upon ignition of the fuel, a plurality of flame patterns are formed, an enclosure extending around the outer tubular member and having an inlet for receiving air, the enclosure directing the air towards the outlet for mixing with the fuel discharging from the outlet to support the combustion, and a vane supported on the outer tubular member for stabilizing the flow of the air, the vane being frustro-conical in shape with its wall tapered radially inwardly in a direction towards the outlet so that a portion of the air impinges on the inner surface of the wall, the vane being spaced from the outer tubular member to define an annular gap therebetween so that a portion of the air passes through the annular gap and impinges against the vane before passing towards the outlet, and so that the remaining portion of the air passes from the register, over the vane and towards the outlet.<sup>1</sup>

---

<sup>1</sup> The terms "the register" in claim 11 and "the housing" in claim 15 lack proper antecedent bases. These informalities are deserving of correction in the event of further prosecution before the examiner.

Appeal No. 1998-1553  
Application 08/595,965

The references relied upon by the examiner as evidence of obviousness are:

Eaton et al. (Eaton)	2,048,495	Jul. 21, 1936
Henderson et al. (Henderson)	3,753,658	Aug. 21, 1973
Vatsky et al. (Vatsky)	4,348,170	Sept. 7, 1982

Claims 11 through 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Vatsky in view of Henderson and Eaton.

Reference is made to the appellant's brief (Paper No. 9) and to the examiner's answer (Paper No. 10) for the respective positions of the appellant and the examiner with regard to the merits of this rejection.

Vatsky, the examiner's primary reference, discloses a burner assembly 10 which "operates in a manner to reduce the formation of nitrogen oxides as a result of fuel combustion" (column 1, lines 9 and 10) and is similar in many respects to the burner assembly disclosed and claimed in the instant application. The burner assembly 10 includes inner and outer tubular members 22 and 24 defining a flow passage 26, a fuel inlet 28 at one end of the passage, a fuel outlet at the other

end of the passage (see Figure 3), splitters 60 in the flow passage for splitting the fuel discharged from the outlet, and an enclosure extending around the outer tubular member and having an air receiving inlet (see Figure 1). As tacitly conceded by the examiner, this burner assembly does not meet the limitations in claim 11 relating to the frustro-conical vane supported on the outer tubular member for stabilizing the flow of the air.

Henderson discloses a carbon black reactor having a feed introduction zone 1, a combustion zone 2, a carbon black formation zone 3, a make oil inlet conduit and outlet nozzle 6, 8, an air conduit 9, a fuel conduit 10, a choke 14, and a cone 20 mounted on a support 26, these components being arranged as shown in Figure 1. Reactants introduced into zone 1 flow into the base 24 of the cone and out through a truncated opening 23. The cone increases the velocity of the reaction mass flowing therethrough (see column 3, line 46, through column 4, line 9) and contributes to the ability of the reactor to produce carbon blacks having different structures (see column 5, line 64, through column 6, line 29).

Eaton discloses a fuel burner unit comprising a nozzle composed of a fuel oil tube 36 and a surrounding atomizing air tube 37, and tubular casings 13 and 65 disposed about the nozzle for directing air around and into the discharged fuel (see page 2, column 2, lines 33 through 70). The casings also serve to physically shield the nozzle from combustion heat and to actively cool the nozzle via the air flowing therethrough (see page 1, column 1, lines 34 through 52). Casing 65 includes internally projecting fins 71 for holding it in spaced relation to the nozzle.

In rejecting claim 11 under 35 U.S.C. § 103(a), the examiner concludes that

[i]t would have been obvious to one skilled in the art at the time of the invention to install a frustro-conical vane [presumably as in Henderson] onto the outer surface of the outer tubular member of a burner [presumably Vatsky's burner] in order to set up a swirling or turbulent action of the secondary air or to direct and properly focus the secondary air to the burner outlet to improve the mixing of air and fuel at the burner outlet, thus enhancing the combustion process. It would have also been obvious to substitute the fins (71) of Eaton et al for the mounting means (26) of Henderson et al to efficiently mount the conical vane to the surface of the outer tubular member while reducing the cost associated with the production of a

mounting means (26) [answer, pages 4 and 5].

Henderson's cone/vane 20, however, which functions as a carbon black reaction mass accelerator, has little apparent relevance to the burner assembly disclosed by Vatsky. Furthermore, there is nothing in the teachings of the applied references to indicate that this type of element would produce a swirling or turbulent action of secondary air in the Vatsky burner assembly as asserted by the examiner, or that such swirling or turbulent action would even be desirable in the Vatsky assembly.<sup>2</sup> The examiner's alternative contention that such a vane would direct and properly focus the secondary air to Vatsky's burner outlet assumes a deficiency in the Vatsky structure which is not borne out by the references, i.e., that the enclosure structure 32, 34, 38 and 40 surrounding Vatsky's outer tube 24 does not direct and properly focus air to the burner outlet. Eaton's disclosure of fins 71 to hold a casing in spaced relation to a burner nozzle does not cure the foregoing flaws in the examiner's analysis.

---

<sup>2</sup> The examiner's position here is at odds with the appellants' disclosure that the frustro-conical vane recited in claim 11 provides a desirable stabilization of air flow.

Appeal No. 1998-1553  
Application 08/595,965

In this light, we are constrained to conclude that the only suggestion for combining Vatsky, Henderson and Eaton in the manner proposed by the examiner so as to arrive at the subject matter recited in claim 11 stems from hindsight knowledge improperly derived from the appellants' disclosure. Therefore, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 11, or of claims 12 through 16 which depend therefrom, as being unpatentable over Vatsky in view of Henderson and Eaton.

The decision of the examiner is reversed.

REVERSED

IRWIN CHARLES COHEN )  
Administrative Patent Judge )  
 )  
 )

Appeal No. 1998-1553  
Application 08/595,965

CHARLES E. FRANKFORT	)	
Administrative Patent Judge	)	BOARD OF PATENT
	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
JOHN P. McQUADE	)	
Administrative Patent Judge	)	



Appeal No. 1998-1553  
Application 08/595,965

Warren B. Rice  
Hagnes and Boone  
3100 Nations Bank Plaza  
901 Main Street  
Dallas, TX 75202-3789